THE MONTHLY MAGAZINE FOR SPECTRUM, SAM COUPÉ AND QL USERS

Sinclair & SAM COMPUTING

Issue 3 Available by subscription only

Reviews:

- SAM DICE
- JoyMouse
- SAMplifier
- GM-Calc
- Super Disc Labeller

Free Booklet!

DTP Guide 1

A Guide to successful Publishing

C PROGRAMMING

Our comprehensive programming guide continues

CONTENTS

Sinclair & SAM COMPUTING

THE MONTHLY MAGAZINE FOR SPECTRUM, SAM AND QL USERS

3 Editorial
Busy times.

4 News
All the latest news and show time-table.

6 Disc Contents
What a giveaway!.

10 Video Titling
Part 2 of our series showing you how to add titles to your videos.

22 Advice Line
Our comprehensive service to solve all your computing questions.

24 PDomain
Our round up of all the latest public domain software for the Spectrum and SAM Coupé.

29 QL Corner
All the latest news and gossip for Sinclair QL users.

32 Programming in "C"
Part 2 of our programming tutorial.

39 Mail Order
Bargains galore.

REVIEWS

7 SAM DICE
With the program's success in its Spectrum +3 incarnation, Kobrahsoft have released a version for the SAM Coupé.

13 JOYMOUSE
After what seems like an age, SAMCO are ready to launch their mouse. But Blue Alpha have pipped them to the post and launched the Joymouse. Will it steal the limelight from SAMCO's mouse? We find out.

16 SAMplifier
Sound output from the SAM a bit on the weak side? Want to route sound through your hi-fi? Then take a look at our review of BG Services' SAMplifier.

20 GM-Calc
After GM-Base, the authors GM Software have written GM-Calc - the first spreadsheet for the SAM.

- ***More reviews of latest serious software releases than any other Spectrum and SAM magazine.***

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SAM Users!

Find out what's on your FREE disc .. turn to page 6.

Spectrum users watch this space - there'll be a FREE cassette with Sinclair & SAM Computing in a few issues time.

Sinclair & SAM Computing - giving our readers a better deal for their money.

Garner Designs Publishing

Editorial

Welcome to issue 3 of Sinclair & SAM Computing. We've had a devilishly busy month and so sorry to anybody who has experienced delays in receiving their copies of S&SC Extra.

As you will have already noticed as well as receiving this magazine, you also got a booklet and a disc. The booklet is the first in a series showing you how to desk-top publish with your Spectrum and SAM Coupé. The disc is for SAM users and contains a number of programs, all of which are detailed on page 6. If you haven't got a SAM, then Spectrum and QL users with 3.5" disc drives can simply reformat it and use it. If you're not a SAM user and you haven't got a 3.5" disc drive then... well...er, I don't know...use it as a door wedge or something. We'll be bringing freebies like this to you regularly. The next planned one is a cassette for Spectrum users. Due to the free disc being included with this issue, the next S&SC Extra will be launched with issue 4 of Sinclair & SAM Computing.

The really big news this month is that we are switching over to lithographic printing very soon indeed - probably in time for issue 4. Those not familiar will printing terminology, it is basically its what might be called 'professional' printing (whatever that means). This will make the print quality even clearer and the overall polish of the magazine better.

The flow of contributions seems to be picking up, which is great to see. However, we always need more so if you've got an idea for an article, please contact me, and as long as its relevant to the magazine and no one else is doing a similar advert we'll print the finished article. We accept contributions by the following medium: hand-written (neat please!), typewritten or word processed, Tasword +2 cassette, Tasword +3 or Wordmaster files on Spectrum +3 disc, IBM PC disc (720K disc format only) with file(s) in ASCII format, Atari ST disc with file(s) in ASCII format, Amiga disc with file(s) in ASCII format. If you are sending a disc with the article on, please also provide a printed copy too. As well as having the prestige of having your article printed, we'll pay you for the privilege too!

Now that we've got well and truely on top of things here, we can concentrate on bringing you a brighter and better magazine each month.

I'm planning to start up a new column as quickly as I can. The column will be for the budding arty-types out there. There must be loads of SAM users, and quite a few Spectrum and QL users, who are using their computer to design graphics.

If you're one of these people then send in your work now! If enough people send things in I'll make the column a regular one, and there will of course be prizes for the best contributions in each computer category.

Contributions should be sent on paper as well as tape/disc (Spectrum discs should be +3 type only please). And I'd appreciate it if you could send a printed copy too.

This column is entirely up to you to support. It was suggested to me by Brent Stevens and seemed a good idea, but such columns can only survive if readers get involved.

So I'll see how things are going at the end of September, and if we've got enough material I'll start the column formally. But I'm sure that once we do and we start handing prizes out that the response will increase.

If you have ideas for any other regular columns please get in touch, I'd love to hear about it. And if you think you can write the column too, well, that's all the better. A magazine thrives from input from its readers, so get inputing!

News

FIRST WITH THE NEWS FOR THE SPECTRUM AND SAM COUPÉ

ALL FORMATS GOES NATIONAL

The march of the All Formats Fairs continue like a conquering army with Bruce Everiss announcing more shows at more venues. The list of venues now totals five, are are: University of Leeds Sports Centre, Leeds; Royal Horticultural Hall, London; National Motorcycle Museum, Solihull; City Hall, Candleriggs, Glasgow; and The Brunel Centre, Bristol Old Station, Bristol.

Hopefully, the new venues will open the fairs' popularity up to more people and exhibitors who have not been able to make the journey to either London or Birmingham in the past.

September sees the start of the fairs at the new venues. Admission to the shows is £4, with each of the shows open from 10am until 4pm.

A *Fair Newsline* has also been set up to give upto the minute show information. Call 0898 299 389 to hear it.

See the opposite page for fair dates, etc.

OUTLET LAUNCH PROGRAMMING COMPETITION

Chezron Software, publishers of Outlet, the disc magazine featured on this issue's free disc, have started a competition which offers a cash prize of £100 for the best graphics and/or sound demo program for the SAM they are sent before the end of the year.

Also, each entry published in Outlet will receive "a minimum of £10", with the first prize of £100 being decided by Outlet editors, Ron and Brian Cavers.

Entries are being taken now, so if you're a budding programmer then get those programs sent off to Chezron Software, 605 Loughborough Road, Birstall, Leicester, LE4 4NJ.

SAM Soundtracker

GNS Productions Denmark report that they are close to finishing a Soundtracker program for the SAM which does much the same job as the Soundtracker programs on the Amiga.

Specifications include 2 stereo channels for 4 bit sampling and the other 4 channels for 'ordinary' SAM sound.

Hopefully, SAM Soundtracker will become as much as a standard music medium on the SAM as its Amiga counterpart has. More details soon.

DANGER U.X.S!

Nope, not an UneXploded Bomb, but an UneXploded SAM! Extremely dodgy rumours are abound saying that the SAM has an "undocumented feature" whereby a sequence of opcodes trigger a meltdown of the SAM Coupé's ASIC chip. Hogwash? We think so, but we challenge Bruce Gordon to show us...preferably on his SAM, just in case!

Manual reductions

After reading our review of DICE for the +3, Kobrahsoft, have quickly responded to our recommendation that the A4 format for their manuals was 'a bit clumsy'. All their new products will now come with A5 sized manuals, which we're sure you'll agree are more preferable.

File Conversions

News has reached us from a Brazillian user who has written a program which enables users of BetaDOS for the Spectrum to read MS-DOS / PC-DOS formatted discs. Details are a little sketchy at present, but we'll hopefully have some firm news in time for issue 4.

CP/M Coming to a SAM near you

BG Services are working on a version of CP/M for the SAM. It is reported to already be up and running and is compatible with the Spectrum +3 version. At present, CP/M programs on a 3.5" disc formatted with a +3 can be loaded straight into the SAM CP/M operating system. Although this is purely for test purposes at the moment, it should open up quite a selected on PD software when the finished program is released.

The system is also said to be working well with several major PD CP/M programs including VDE already running on the SAM. Contact BG Services on 081 397 0763.

VTX'er gettin' closer

BG Services' other current project, the "VTX'er", which allows SAM users to connect and use a Spectrum VTX modem to their SAM is also nearing completion. The hardware design is said to be finished with only the software left to be finsihed. The software should consist of both scrolling and Viewdata access programs.

PD Colour Dump

A utility allowing SAM users to print out graphics in full colour to colour printers is now circulating amongst PD sources - even though it is said to be more powerful than the one commercially available from PBT. Supported features include support of line interrupt palette changes, and colour replacement whereby any on-screen colour can be replacement upon printout with another. Watch S&SC for a review soon.

SHOW WATCH

SEPTEMBER

All Formats Computer Fair
Univeristy of Leeds Sports Centre,
Calverly Street, Central Leeds.
Sunday 1st September
John Riding (0225) 868100

Computer Entertainment Show
Earls Court 2, London
September 5th-8th
EMAP Exhibitions (071) 404 4844

All Formats Computer Fair
Royal Horticultural Hall,
Greycoat Street, Westminster
Saturday 7th September
John Riding (0225 868100)

All Formats Computer Fair
National Motorcycle Museum,
Solihull
Saturday 14th Sepember
John Riding (as above)

All Formats Computer Fair
City Hall,
Candelriggs, Glasgow
Sunday 22nd September
John Riding (as above)

SEPTEMBER

All Formats Computer Fair
The Brunel Centre,
Bristol Old Station.
Sunday 6th October
John Riding (0225) 868100

DISK CONTENTS

- OUTLET Demo
- FLASH Tutorial
- GRAPHICS Tutorial
- SOUND Tutorial
- Atari ST & IBM PC Disc reader/screen converter
- AND MUCH MORE!

Welcome to the first in our giveaways to subscribers. We could have said 'send off for this free disc', but we decided to go the whole hog and give a copy to EVERY subscriber.
If you don't own a SAM Coupé, stay tuned for future giveaways for Spectrum users.

Whatever you use your computer for, I hope you'll enjoy all of our free tapes and discs, especially this one.

Daniel Garner

Animation demo
Load this to see a small parody on the King Tut graphic.

Problems with your disc?
Although we've done our best to ensure that your disc loads and works correctly when you get it, we must accept that the odd gremlin will creep into a small percentage.

So if your disc fails to load then return it to the normal Garner Designs address and we'll send you a replacement by return.

INSTRUCTIONS

Due to space restrictions on the disc, we have not been able to include a copy of DOS. Therefore, you must first insert a disc with a copy of DOS on it, and press F9 or type BOOT.

When DOS has loaded, insert your S&SC disc and press F9 to boot the disc. After a short introductory sequence the main menu will be displayed.

From here all of the programs and utilities on the disc can be accessed by pressing one of the number keys, 1-6.

Outlet Demo
Chezron Software has been producing Outlet since 1987 and it is one of the most widely read disc and tape magazines around. If you haven't seen a copy of it yet, get a taste of what to expect with a demo of the SAM version of the monthly publication.

FLASH Tutorial
A clever and intuitive guide to using FLASH's features, including how to use the animation tools.

SPRITE Tutorial
Find out the tricks to using sprite graphics in your own programs using the GRAB and PUT commands, as well as manipulating sprites through machine code (includes source code).

SOUND Tutorial
Using sound on the SAM is a very tricky subject indeed and hopefully our sound tutorial will shed enough light on the subject to get you started.

ATARI ST and IBM PC Disc Reader
This excellent utility will read Atari ST and PC discs. Not only does it allow text files to be viewed, but graphics files saved in DEGAS format can be converted to standard SAM SCREEN$ files.

SAM DICE

Disk Information Copier Editor

Hot on the heels of our review of the Spectrum +3 version of DICE (Disc Information Copier Editor) comes SAM DICE, the SAM Coupe version. Cosmetically, the SAM version is much the same as the Spectrum version, although of course, the underlying technical method of what it allows you to do is different. Upon loading, the main screen is displayed which shows you a 'map' of the disc in the drive (showing you where data is stored on the disc) and information about that disc such as the number of tracks and sectors, the space used and remaining on the disc and the number of files on the disc. A list of options at the bottom of the screen allow both the beginner and expert alike to manipulate the data on virtually disc. The options are as follows. New, Change, View, Directory, Format, Analyse and Quit.

The New option simply resets SAM DICE and reads the information from the disc in the drive. The Change option, for users with 2 drive SAMs allows SAM DICE's operation to be switched from one drive to the other. The View option allows you to view and modify a disc's data at sector level. The Directory option allows the disc's file directory to be displayed, and allows you to alter any file's information. The Format option allows you to (surprise surprise) format a disc. The Analyse option allows a whole host of things to be done, but it is especially useful for reading and modifying non-standard sectors. The Quit options dumps you back in Basic.

Upon selecting the View option you are presented with a visual representation of the disc's contents at sector level, both as a hex dump and an ASCII dump. The disc's contents can be scanned through by using the cursor keys or you can jump to a specific track or sector. If you don't really know where you want to jump too, then the Find option comes in really useful. This option will prompt you to enter a text string of up to 10 characters and then it will search through the entire disk until it finds it. If it does find it, it tells you where abouts on the disk it is along with the file that the text string is in. Quite impressive.

You are also able to directly edit the disk's contents too. Individual bytes can be altered very easily indeed, although any changes you do make are not actually written to the disk until you select the Save option. A Print option is also available which gives you a copy of the screen. The edit mode also has a built in disassembler of sorts. As the cursor moves over each byte SAMDICE disassembles the byte and displays the assembler mnemonic. The ASCII and binary value of the byte is also displayed, as is the word value of the current byte and its neighbour.

The edit mode is especially useful for hacking into games and other protected files to look for passwords, etc or to change text which is used for screen displays, etc.

The Log option allows a file which has had its directory entry corrupted (or indeed if the entire directory has been corrupted) to be recovered. This involves copying each sector which the file exists on its memory. The log is stored at 65536 and when all the sectors for a given file have been logged, you simply return to Basic using the Quit option on the main menu and save the code to another (healthy) disc. However, this file will be saved as a code file, where the original file may have been a Basic program for example. In this case, the directory entry for that file must be manually altered. This can be done using SAM DICE's editor mode, and the manual describes the format of directory entries.

Back to SAM DICE'S main screen again; selecting the Directory option displays a list of all the files on the disk. The cursor keys move a box onto the files' names. Individual or groups of files can be 'tagged' for copying, moving or erasure, while individual files can be renamed.

Selecting the Info option displays information about the currently highlighted file, This includes its file type, file length, etc as well as where it is on the disc. A 'map' like the one on the main screen displays this information, and is very useful in ascertaining if a file has been fragmented across the disc.

The Directory option also displays the names of any files which have been erased, and upon selecting the Info option, you are told is recovery of the file is possible. Pressing R will attempt a recovery. If this file reloads correctly and works okay, the recovery has been successful.

The Format option on the main menu simply allows you to format a disc. SAM DICE's formatting routineis much faster than SAM DOS's FORMAT command. Identical branded discs formatted in 65 seconds with SAM DICE as opposed to 105 seconds with SAMDOS. However, although the manual does not specify this, I suspect that SAM DICE does not do the verification check that SAM DOS does after it has formatted a disc. However, if you are using top brand discs, the verification check will hardly ever show up an error during formatting anyway. Thus making SAMDICE's formatting command very useful indeed.

The Analyse option on the main menu allows the integrity of the data on a disc to be examined. Individual tracks can be loaded which SAM DICE reporting any errors reading the sectors on the track. Sectors can be examined using the same hex/ASCII data display as with the editor mode. A Format option is also available, but this time it allows you to format single tracks on the disc.

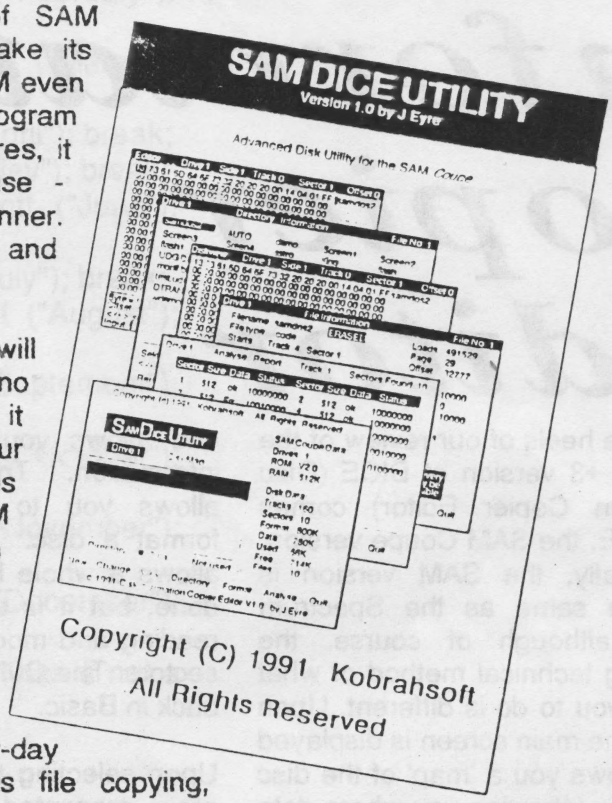
The most useful option is the Checkdisk option. This reads every sector on the disc and reports how many defective sectors it finds (if any). If defective sectors are found, you are given the option to create a "BADSECTORS" file. This simply overwrites the data at the corrupted sector with a hidden and protected file so that SAM DOS does not try to store any data there in future, thus making the disc useable again. A very welcome feature indeed.

So to sum up. SAMDICE owes a lot of its strength to the Spectrum +3 version of DICE which has established itself as the disc utility for that machine. I'm pleased to say that the quality of SAM DICE may well make its success on the SAM even greater. For a program with so many features, it is very easy to use - even for the beginner. The manual is clear and concise too.

While many users will feel that they have no use for a disc utility, it is when one of your discs becomes corrupted that SAM DICE is an invaluable aid. It does of course, do many other things too, even done to the more mundane every-day operations such as file copying, renaming, etc. Quite simply, SAM DICE is a program for all seasons.

SAM DICE is priced at £14.95 and is available from:

KOBRAHSOFT,
"Pleasant View",
Hulme Lane,
Hulme,
Nr.Longton,
Stoke-on-Trent,
Staffs,
ST3 5BH.



VERDICT

SAM Coupé

✓ Easy to use.
Impressive range of features make it an invaluable disc utility. Buy it!

✗ Only recognises 780K formatted discs, i.e. it will not read discs formatted to other capacities with MasterDOS.

95%

RAINBOW

The Colour Printer Utility for the Spectrum and Star LC10C, Star LC200C or Epson JX-80 Colour printers.

Exploit the colour printing capabilities of your printer to the full with *RAINBOW* - the original and the best colour printout utility.

The simple menu-driven control program allows you to load in any SCREEN$ file and output it to any Star colour compatible printer in FULL COLOUR. However, it also allows you to tailor the output - line feeds and margin settings can be altered, as can the area of the SCREEN$ that is printed, etc.

Others have tried to capitalise on *RAINBOW's* success by bringing out rival versions. However, with *RAINBOW* priced at just £6.95 on tape or disk, and its nearest rival priced at an exhaustive £19.99 for a program which basically does what *RAINBOW* can do, its not hard to see which one is better value for money.

In short, *RAINBOW* is essential to any Spectrum user with a Star LC10 (or compatible) printer. If you're thinking of buying one of these printers then *RAINBOW* will be the only software you'll ever need to make the most of it.

What's more, our policy of continued improvement means that it is being improved all the time. Upgrades to future versions are free and customers will be informed of new versions and their specifications by post.

CLIP ART

The ultimate collection of clip art is now available for the SAM Coupé as well as the Spectrum! We have also recently extended our range, which total well over 800 pictures!

Anybody with PCG's Desk-Top Publisher or any art package can use the clip art to add that extra bit of sparkle to your documents and designs.

All the pictures are of very high quality and will add professionalism to everything you design incorporating them.

The subjects covered by the entire range include: sport, education, animals, religion, vehicles, signs, humour, cartoons, and many many more; with each tape/disk containing some of each.

We have rationalised our range of clip art so that they are grouped into attractive Presentation Packs each containing either two tapes or two disks (depending on the format you require). Each Pack also contains full instructions showing you how to incorporate the clip art pictures into your own designs.

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175 Craigton Road
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AB1 7UA

Teachers Pet Software have been supplying schools with the educational programs that they want in their classes for the last three years. Why not drop us a line and see what we have to help your children?

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Now available version 2.8 Many of the requested features have been added such as loading from drive 2, returning to Spectrum mode without clearing the RAMDISK, etc. V2.8 can even read dual density OPUS disks on your SAM.
SPECMAKER is constantly being improved and is the simplest Spectrum emulator for SAM. 1000s of programs work without the need for any conversion. Most other programs need only minor changes.
Price £13.45 (INDUG members only £10.45)

S D Software, 70 Rainhall Road, Barnoldswick, Lancashire, England, BB8 6AB.

VIDEO TITLING

Our series covering DTV continues with details of how to get your graphics onto video and manipulate them.

SPECIAL EFFECTS

In the last article I told you how to connect your computer to the video recorder and how to get things recorded. In this article, which will mainly be for Spectrum users, I shall be detailing how to perform live special effects on your titles or graphics to give them that extra bit of sparkle.

Ad lib to fade

It was described in the last article how a screen designed in an art package could be recorded onto video. This is all well and good, but however good the screen is, when someone is watching the finished video the graphics will inevitably just 'appear' on the screen for a set amount of time and then 'vanish' - very bland indeed.

While editing suites can rectify this by providing all manner of wipes, fades, scrolls, etc, such equipment is very expensive, and by my reconing, if you can afford one of them you can also probably afford a computer like an Amiga which is more suited to DTV.

However, for those users who can only aspire to such equipment and must make do with a Spectrum, SAM or QL and a camcorder, then achieving special effects using the computer can easily be achieved.

FADING

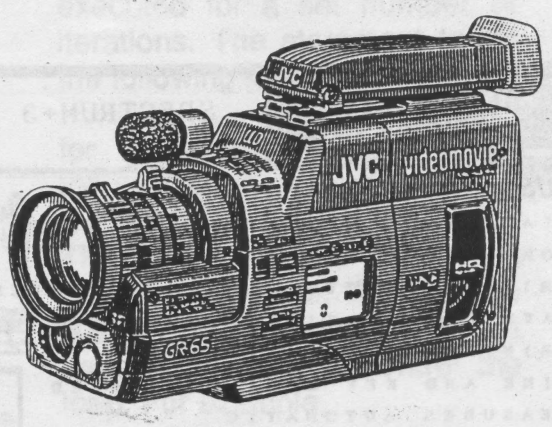
Fading a screen is a relatively easy process to perform. All that needs to be done is for individual pixels to be erased at random until every pixel on the screen has been erased.

Although it is feasible to do this

```
 1 LET START=65200
10 CLS : PRINT AT 2,5;"FADE code : relocatable"; AT
5,0;"Setting up....."
50 RESTORE 500: LET ADD=0: READ A$: FOR A=1 TO LEN
A$ STEP 2:LET H$=A$(A TO A+1): GO SUB 3000: POKE
START+ADD,D: LET ADD=ADD+1: NEXT A
100 PRINT AT 8,0; "Code start: ";START; AT 10,0;
"RANDOMIZE USR ";START;" - Fades screen"
110 PRINT AT 15,0;"PRESS 'ENTER' TO FADE SCREEN"
111 IF INKEY$<>CHR$ 13 THEN GO TO 111
115 RANDOMIZE USR START
500 DATA "11FE087B0707075F2100400118007EA3772310FA
0D20F71520E93A8D5C77545D1301C002EDB03A485C770E3F
EDB0C9"
2999 STOP
3000 REM HEX-DEC
3010 LET D=0: FOR I=1 TO LEN H$: LET E=CODE H$(I)-48-
7*(H$(I)>"9")-32*(H$(I)>"£")): LET D=16*D+E:NEXT I:RETURN
3020 STOP
```

JARGON

DTV: Desk Top Video - used to describe the art of using a computer to aid or create video presentations.
Editing Suite: Hardware (usually very expensive) which digitally processes a video input and outputs it in real time. Such processes may be fading, wiping, colour filters, picture magnification, etc.



from Basic, it is much too slow. Therefore, we must use machine code. The listing below will fade the screen as described above. The routine is relocatable in memory (simply change the variable 'start' in line 1 to the address you require), and so can be easily incorporated into your own programs.

To make a fully functioning fading routine suitable for DTV work, we must first save the fade machine code to tape or disc with the command:

SAVE "FADE.BIN" CODE start,47

Now type in the program shown on the right. When you run it you are prompted to type in the filename of a SCREEN$ file you have.

When this has been loaded it is displayed on the screen. You should at this point cue up your video, and when it is at the correct point set it to RECORD mode.

Then on the computer, press the SPACE BAR. This causes the screen to fade. When it has done so, the screen remains faded. You should then stop the video recorder when appropriate.

To break out of the fader program press the ENTER or BREAK key.

```
1 REM SCREEN FADER PROGRAM
5 LOAD "FADE.BIN"CODE 65000
10 CLS: PRINT AT 0,0;" SCREEN FADER "; AT 5,0;"When screen has loaded, press SPACE to fade it."; AT 7,0;"When screen has faded, press ENTER to stop the program"
12 INPUT AT 0,0;"Filename of screen to load:"; AT 1,0; LINE A$
15 LOAD A$ CODE 16384: REM LOAD THE SCREEN
20 IF INKEY$<>CHR$ 32 THEN GO TO 20
25 RANDOMIZE USR 65000: REM FADE THE SCREEN
30 IF INKEY$<>CHR$ 13 THEN GOTO 30
50 STOP
```

WIPES

A wipe is when the picture is removed from the screen in a linear fashion. The best analogy is the chalk board, where the teacher will rub out a line of writing with the eraser from the left hand side of the chalk board to the right in one movement.

Although flashy wipes such as side wipes and spiral wipes can be performed on flashy equipment, for the purpose of this article we shall stick to our 'from basics' approach and perform wipes from Basic.

Horizontal wipes, i.e. when the picture is wiped from top to bottom, or vice versa, are esay to achieve. Type in the listing to the right to see (if the wipe is too quick for you simply put a PAUSE 5 command at the end of line 20).

```
1 REM WIPE DEMO
5 INPUT "Filename of a screen to load: "; LINE A$
10 LOAD A$ CODE 16384
20 FOR A=0 TO 21
25 PRINT AT A,0;"

                ": REM 32 spaces
30 STOP
```

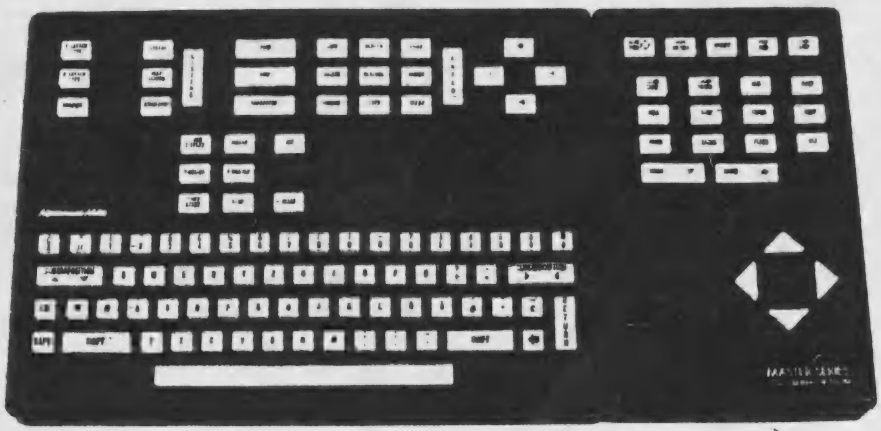
To change this from-a-top to bottom wipe to a bottom-to-top wipe, simply change line 20 to read:

```
20 FOR A=21 TO 0 STEP -1
```

Now a little problem for you. Work out how to do vertical wipes from the left and right of the screen. An easy problem, I know, but I think you'll find it highlights the start of our problems in using Basic for simple effects - that is, its too slow.

In next issue's Video Titling article, we'll start piecing together some more advanced routines which will form the basis of the video titling software program which this article will be building up over the coming issues.

In the meantime, keep experimenting, and please report back of your successes, and failures.



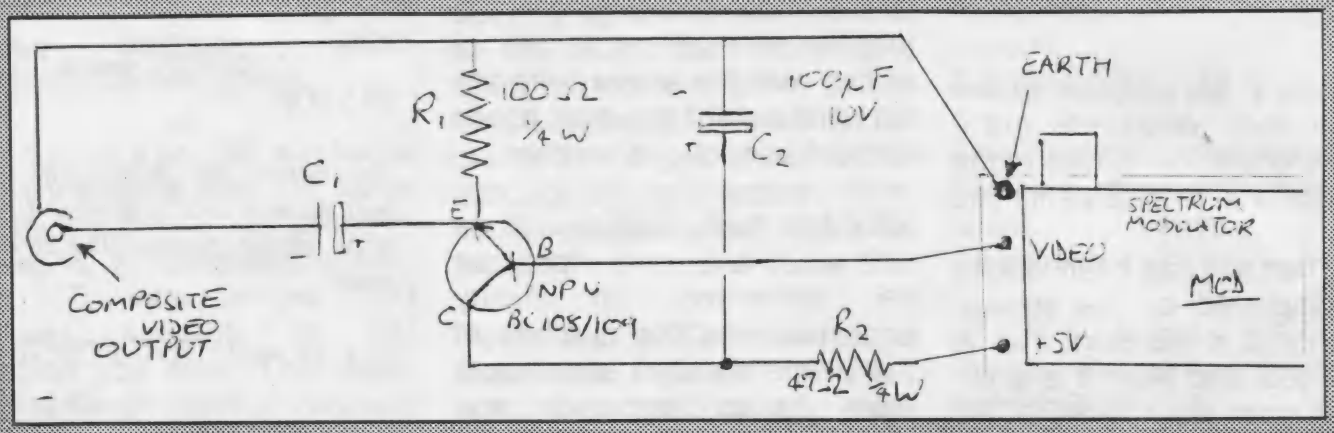
Video Titling Forum ...

Our Video Titling series is creating A LOT of feedback. Many users have shared their own experiences of using the Spectrum, SAM and QL with their videos and camcorders. So now we've got a whole host of new material which will mean that the series has been extended so that we can cover everything. Firstly in this issue, we have two excellent tips for you.

"In the article on VIDEO TITLING it was mentioned, quite rightly, that there is no video out facility on the Spectrum 48K. If one is capable with a soldering iron and happy to open up the Spectrum then it is possible to provide a video output.

I have now provided this on 4 Spectrums and it was originally to obtain video to drive an amateur radio TV transmitter to provide such as station call sign and etc. It also now drives both colour and Black and white monitors with the considerable improvement of display. Circuit details shown below.

The actual output is nearer .7V P to P than the standard video level of 1V but this has been okay in practice. On the 48K PLUS a socket can be mounted on the rear of the case and can be virtually any miniature type but the phono will be better for using standard ready-made leads.
On the "rubber key" version it is best to bring out a short lead of miniature coaxial cable and terminate in a cable mounted socket.



Note: *Component values not critical,*
i.e. R1 47ohm to 200ohm R2 47ohm to 1000ohm C1 200 F to 470 F C2 100 F and up

Malcolm Perry

"With reference to last month's article, there is no need to keep turing the 'RF channel' screw back and forth like a yoyo just to check on what's been recorded. A simple method is possible as follows.

Connect your computer aerial lead to the aerial socket on your VCR. Then select a channel on your VCR (I use channel 5) and programme it in the normal way until you receive the computer picture, then set the channel.

Once you've done this, press your programme select button on your VCR and make sure you have BBC 1 and 2, ITV and Channel 4 present. If you don't have the above channels present, then go back to your computer picture channel and then turn the RF screw at the back of your VCR until a new computer picture appears. Then check if the above channels are now present : keep doing this until all TV channels and your computer picture channel are present.

Once you've got all channels, you'll find that when you've recorded some computer pictures, you just have to play them back as normal. Thus, stopping you having to turn the RF screw everytime you want to use your computer with the VCR.

Some of you may find that colours are too bright, etc. Just finely tune your computer picture channel until the desired picture is achieved.

If you only need black and white, and have a +3 or +2A then wire up the (VDU) RGB/PERITEL socket to your "video in" socket/cable on your VCR. This gives a much better picture quality and uses the auxiliary channel on your VCR."

John White.

Joymouse

John Wase reviews Blue Alpha's new mouse system for the SAM Coupé.

This is the battle of the mice. SAMCO have recently done a mail-shot advertising their mouse. It is, if the information is to be believed, neat, tidy SAM-specific and super-sensitive. But it's not yet here, and Blue Alpha's is: whoever makes it, it is, at any rate nice to see a mouse at last after the long wait. My review mouse is, I guess, a beta-test version. It's a modified ornery Taiwanese rodent, distinguished from its mum by a rather loose tail which is not typical of them all. I checked John Croghan's out, and his mouse's tail is fine (careful how you word it, Wase), so it's just a quirk of mine. Lurking within the body is a teeny mouse-size printed circuit board that has a squeeze to be included. So much of a squeeze that on my pre-production model, foam rubber is visible through the expanded crack twixt back and belly: its plimsoll line, as it were. Again, this is a pre-production snag, I'm assured, and Adrian Parker, proprietor of Blue Alpha Electronics, tells me that for production models, there is to be a spacer of thick plastic all the way round, but it's been delayed. Hence the bulge at the plimsoll line. Oh that I could find a similar excuse to give to my wife.

Accompanying the mouse is a guarantee card, two printed sheets and a disc marked "Joy Mouse". One of the sheets, the one folded into two with two A5 photoreduced pages of print contains some information on how it works, along with some misprints. The mouse overlays the keyboard in the same way as joystick 1; left, right, up and down are the same as pressing keys six, seven, eight and nine. The left mouse button corresponds to key zero and the right hand one to key one. That's nice: it should work with all Dave Tonks' games and the midi sequencer, for a start.

The instructions also contain an apology: "The proper instruction book should be ready shortly," it says; "We'll send it when it is". Alongside are a few pokes to make the Joymouse, as it's called, work better with "Flash". Adrian Parker explains that, as "Flash" was written specifically for a joystick, the action is slightly different from normal. In fact, it's worse than that - Bo Jangeborg also used his own programming language in writing "Flash", and that makes things very convoluted at times.

"Accompanying the mouse is a guarantee card, two printed sheets and a disc marked 'Joymouse'."

There are two drivers supplied with the mouse on the disc. Some programs are naughty, and just pour themselves over the mouse driver, though they should be written to check if the page is free. But they don't always; hence you have a couple to try. the Basic functions BUTTON, XMOUSE and YMOUSE will then return the state of the buttons and the mouse positions.

Finally, there's a program - AUTO_V1.1 which scans the mouse using INKEY$ - not as good as the proper driver, though it still works - just. As a demonstration it contains a utility which is supposed to act as a disc information provider and organiser.

O.K. so far? Then let's see how things pan out in practice. So make a backup of the software, erase SAMdos and put in MasterDOS (nothing but the best) and away we go ...

Well, the connector goes in neatly enough into the joystick port, and we boot up. The first program is a short bit of Basic to demonstrate the use of BUTTON, XMOUSE and YMOUSE. All it does is doodle or clear the screen if you press the button. I wasn't terribly excited about those buttons: although it is a neat enough mouse for my stupid fat hand, the button required quite a bit more pressure than those I am used to at work. Ah well, I expect I'll get used to it. You can actually doodle quite reasonably if you hold the rodent with a steady hand - it's not too bad at all. What's the next on the menu?

"You can actually doodle quite reasonably if you hold the rodent with a steady hand - it's not that bad at all."

AUTO_V1.1 loads a complicated series of screens, ending with an irritating request for the time. Following this, the screen again changes to a sort of studded grey job, with what looks like a mandelbrot plot containing part of a camshaft near the top. I used the mouse to move the pointer round to SAM (on the bar at the top, along with INFO, FILE and DISK, together with a digital SAMwatch). This is the point at which you find out just how bad INKEY$ is at getting the mouse signals. Movement is jerky but glacial, rather like when my wife asks me to rise, take the coal bucket and fill it (it's snowing outside). Click on SAM, and true enough, a window opened, telling me I had ROM version 3.0 and MasterDOS 1.3. There we stuck. Eventually, enough pressure on the ESCAPE key elicited the error message "1240 - Basic stack full". It's a big buggy Basic program, and this was one of them. It stuck here because it was calling an error procedure (appropriately named oh_sh) in line 1230 which unfortunately called itself again in line 1240: it's recursive, so it was just filling the stack up. There's a similar problem more often than not with drive 2, and it would not always format a disc. but it's all good clean fun. I understand there will be a further program of this type on your disc, but using the proper driver. However, it's pretty instructive to play with the INKEY$ version - if you can stand it! And the program, being completely in Basic, shows you exactly how to program the thing - if you avoid the bugs!

Next "Flash". It worked rather well with "Flash", I though. Instead of coming up with a pretty picture, there's always that dreaded message in "Flash" - "Backup to tape?" Now we can put it to good use. It's easy to break into the program at this point (just press "n" for no and keep your finger on the escape button whilst you press "return"), and enter the three pokes I mentioned which improve mouse sensitivity. They are: POKE &10CD4,&32: POKE &109F4,&7E: POKE &10CD1, &32. Now here's a secret. If you change the last poke to POKE &109FF,0 , you'll improve matters still further. I am also told that if you also poke &1013D with 8 and &10138 with 9 before you continue and save the modified (but only with version 1.1 of "Flash" - the one that came with the ROM upgrade), you'll start up directly in joystick mode, but I couldn't get that to work with my version. This is of no consequence: just select joystick mode, if you really must, go and save it from there. Apart from this, the mouse worked very well. You need a steady hand with the rodent and a bigger area on the desk than - there goes the pile of discs - I have, and I still don't like the buttons - hope they'll improve in the final version. But cursor

L JARGON

MOUSE: Input device controlled by moving it with the hand. An on-screen pointer moves relative to the direction and distance the mouse has been moved.

***BUTTON, XMOUSE* and *YMOUSE*:** functions used by Basic to give information about the mouse's current status, i.e. relative position with XMOUSE and YMOUSE and which buttons (if any) and depressed with BUTTON.

DRIVER: A small program which acts as an interface between a main program and a piece of hardware, in this case a mouse. Drivers takes all the hard work out of using a particular piece of hardware.

Pointer: Usually an intregral part of mouse software. Basically, as you move the mouse, the on-screen pointer moves accordingly.

movement was pretty steady and selection of items satisfactory. Overall, they've cracked this bit pretty well.

On to the games, now. "Bombed Out" works quite well, though I'm not as quick with a mouse as with a keyboard. In fact, I don't think I'm very quick at all ... Frankly I'm old fashioned and prefer the keyboard. but then I would ... Quite fun, now you get used it, this mouse.. Now what's next?

The good bit, of course. All this rodent does is simulate a joystick. So anything which uses a joystick will work with the mouse. Anything? Well, it's a bit more complicated than that. I stuffed it in the Kempston Port on the Discovery disc drive. Poor Sweevo ran like a rocket for the wall, and was then glued there. Likewise, Lunar Jetman shot up to the top of the sky, firing profusely, though at intervals he came down to earth, unprompted. I tried it in a Spectrum +2 and promptly jammed the keyboard response solid; the effect was reversed on unplugging it. The Disciple was only fractionally better, the poor rodent was completely ignored by it. All this is because the mouse is wired to the plug as a sort of Sinclair mouse (well I think it's a sort of Sinclair mouse) emulating a Sinclair Joystick. Consequently a Sinclair Joystick port should do. Except that SAM's is funny and has a 5 volt line somewhere which the Spectrum +2 lacks. Or something like that. In other words, small differences cause big problems - BUT to make it work, all you need is an adapter! Blue Alpha assure me that they have this under control, and adapters and alternatively wired litters of mice are now incubating.

So, let's sum up. This mouse is here and now, SAMCO's is not. It works, although the button action on the review model was stiff and because of this, it would be difficult to rattle it like you can a joystick. If you're not desperate for a mouse and only have a SAM anyway, it might possibly pay you to wait for SAMCO's mouse, which is likely to be more sensitive. If you have several computers, or want a mouse now, then the Joymouse could fit the bill. At £39.95, it's not exactly cheap, but it won't break the bank, either, and currently, at its special offer price of £29.95, it's good value.

The Joymouse, from Blue Alpha Electronics, Ynysforgan Farm, Morriston, Swansea, SA6 6QL. Phone 0792-310865.

MOUSE SOFTWARE

Although there isn't much software around at the moment which takes advantage of the mouse capability of the SAM Coupé, now that two companies, Blue Alpha and SAMCO, have launched mice, you can expect a flurry of software sporting 'mouse compatability' of some kind.

However, as with other computers which haven't come with a mouse as standard, such as the Spectrum and Commodore 64, we may have to wait some time before programmers start to take full advantage of mouse control in their programs.

The question of which of the two mice will prove to be the more popular is a hard one to answer at this point. On one hand, Blue Alpha's mouse has already been released and has a head start. On the other hand, SAMCO's will be the 'official' mouse and so may become the dominant mouse. Only time will tell.

VERDICT

SAM Coupé & SPECTRUM

✓ Works with Flash and other programs with joystick option.
Relatively cheap.
Theoretically works on the Spectrum too.

✗ Dodgy button action.
Supplied demonstration programs don't 'show off' the mouse's features.

75%

SAMplifier

A plug-in sound amplifier for the SAM Coupé.

The SAM Coupe undoubtedly has very good sound capabilities. However, as with other computers, sound output via a television or monitor is not very good, especially in the case of TVs. BG Services' SAMplifier aims to rectify this by providing SAM users with a device capable of extracting the stereo sound output from the SAM's lightpen socket and amplifying it through any hi-fi.

The package comes in two versions. The plain 'vanilla' version consisting of just the SAMplifier device, and the full package which also include a pair of mini-stereo speakers.

Connection of the device is simple. A 7" cable with a normal DIN connector links your SAM to the SAMplifier's compact 3"x2"x1" white plastic case. I would have preferred the cable to be longer, because as it stands, the SAMplifier either has to lie awkwardly on the desk behind your SAM or stand on the flat vented area of the case.

Although there isn't a light pen available yet for the SAM, BG Services have thoughtfully put a through-port on the SAMplifier if and when a light pen arrives.

Apart from the light pen through-port, the SAMplifier also has an Output socket for connection to a Hi-Fi and a large circular volume control. The Output socket is a standard Walkman-headphone socket, thus allowing you to connect the SAMplifier to virtually anything.

The stereo speakers which BG Services sell with the fully package are small (3.5"x2.5"x1.5") black cased affairs which offer good, but not brilliant, sound output. However, the convenience of having two desktop speakers just behind your SAM is good.

Sound output depends a lot on the volume control. Although the SAMplifier has a large volume range, in order to obtain a crisp hiss-free output, the volume control needs to be on a low setting. This does not however, mean that the sound output is quiet, but merely hiss-free. The SAMplifier will reproduce both stereo channels, assuming of course your Hi-Fi, speakers, etc are stereo.

Once you have found the correct setting for your SAM, you can happily turn down the sound on your TV and listen to the SAMplifier churping all the sounds out instead. The sound quality is really very good, even on the small speakers that BG Services sell. However, the best results can be obtained by linking the SAMplifier to a hi-fi system.

So to conclude, it is fair to say that the SAMplifier does its job very well indeed, although people with TV's might not appreciate the quality difference without hearing the SAMplifier in action for themselves (why not drop into one of the London All Formats Fairs where BG Services usually have a stand, - Ed). This is especially the case when people see the £20 price tag for the 'vanilla' version and the £25 price tag for the full version including the stereo speakers.

This may seem expensive, but considering that the thing works well, and BG Services have to cover their costs in order to develop new products, then the price is very reasonable indeed. Your SAM will never sound as good.

BG Services,
64 Roebuck Road,
Chessington,
Surrey,
KT9 1JX.
Tel: (081) 397 0763

VERDICT

SAM Coupé

✓ Does what it sets out to do. i.e. amplifies sound from the SAM.
Through-port for lightpen.

✗ Cable linking SAM to SAMplifier needs to be longer.
May be priced too high for many people.

80%

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.. OUTLET is undoubtedly the most intelligent and interesting magazine for the Spectrum - please keep up the good work. 151/08

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I must say how impressed I am with the ever increasing quality of OUTLET ... for example PROCROSS was, in my opinion, one of the best utilities for the Spectrum I have ever seen. 182/03

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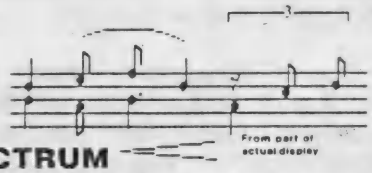

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GM-Calc

A spreadsheet for the SAM Coupé

GM-Calc is a spreadsheet from the same stable as the database GM-Base. GM Software's current policy of "Back to BASICs" has proved that very useful applications can be written in BASIC.

GM-Calc is certainly not an exception to this rule. Upon loading you are presented with the standard cell matrix as on other spreadsheets. GM-Calc's screen is extremely clear and uncluttered, mainly due to the use of MODE 3 to allow more onto the screen.

The cursor keys are used to highlight any of the cells on the spreadsheet with its contents scrolling when the highlighted cell reaches an edge of the screen. The spreadsheet is 100 rows by 52 columns big, which allows complex calculations to be carried out quite easily.

Each cell can have one of four possible states: empty, text cell, numeric value or a formula.

Pressing F1 will make the currently highlighted cell a text cell (pressing SHIFT F1 allows you to edit any text already in that cell). Although the cells representation on the screen are of a specific length, you can actually place a longer text string in the cell (up to 45 characters, whereas each cell is only 10 characters long), which will continue past the 'end' of the cell on the screen.

Pressing F2 enables a numeric value of upto 9 characters long to be stored in a cell. Pressing SHIFT F2 allows you to edit the current numeric value in the cell.

Pressing F3 is where the action is, so to speak. This option enables a formula to be defined for a given cell (or pressing SHIFT F3 allows the current formula in the cell, if there is one, to be edited). Such formulas could be:

B5+A11
SUM(C2.C8)
COS(A2)

The SUM function enables a set of cells value to be accumulated to produce a final result, in the case above, SUM(C2.C8) means the same as C2+C3+C4+C5+C6+C7+C8. The SIN and COS functions are also available, though I can think of no domestic scenario in which I would need them.

When a formula is being calculated, it stores its result in the cell where the formula is.

As well as the normal spreadsheet operations, pressing F9 allows you to choose other options via simple menus. The System menu allows you to re-calculate the spreadsheet (also envoked with F7), display help information, clear the current spreadsheet, and display the numeric data in histogram format.

The last option for producing histograms enables the numeric data from a range of cells to be produced (although only 48 bars can be displayed. Graph titles can also be entered. Pressing D enables the graph to be dumped to an attached printer. A very useful function indeed.

The Disk menu enables spreadsheets to be loaded or saved to disk, or a directory of the current disk to be displayed.

The Print menu controls the output of the spreadsheet to your printer. Output is of a range of cells, with the printer dump being very clear and easy to read. If your printer is Epson compatible, you can set the printer to Pica, compressed pica, NLQ or compressed NLQ mode. The compressed mode is essential

VERDICT

SAM Coupé

✓ **Extremely easy to use.**
Suitable for beginners, yet comprehensive enough for most uses.
Relatively cheap.

✗ **Needs to enable more complex formulae to be defined.**

90%

otherwise only 8 columns could be printed out.

The 'Further Options' menu contains options to copy of range of cells to another part of the spreadsheet, erase a range of cells, sort a range of cells (into ascending or descending numeric order), and an option to automatically insert the month names at the currently highlighted cell position.

The menus are straightforward to use and provide some very useful options, such as the month name insertion option.

So my thoughts on GM-Calc? Well, I liked it a lot. While it does not have the scope of spreadsheets on other computers, in particular the range of formula operators available, it has more than enough scope for anybody to make considerable use of it. The only minor gripe I have, is that the method of entering numeric values into cells should be changed. Instead of having to press F2 first, I think the program should sense if the user is typing a number or a decimal point, and if so switch to numeric insertion mode automatically. As numeric input is by far the most tedious thing to do at the best of times, by not having to press F2, quite a bit of time would be saved.

The program is well written and well designed, which shows as it is extremely straightforward to use, and the screen layout is very clear. With the price of the program being on £9.99 its not expensive either, and as there must be 101 different uses for a spreadsheet (home budgetting and small business accounts being two which immediately spring to mind) then GM-Calc is well worth the money.

GM-Calc costs £9.99 and is available from:

GM Software,
48 Main Road,
Crynant,
Neath,
SA10 8NP.

A users opinion ...

"Having waited for a SAM specific spreadsheet for a long time we looked at GM-Calc with great expectations. We pressed F9 and 15 seconds later the worksheet appeared on the screen. It consists of 52 columns A to AZ and 100 rows 1 to 100, giving 5200 cells. Each cell will accept 9 characters. Columns A to I and rows 1 o 16 can be seen on the screen, and a pointer (a red rectangle of the size of a cell) is moved around the screen with the arrow direction keys. When it gets to the edge, the screen will scroll automatically to the next column or row.

There is no heading column or row and one has to use column A and row 1. This has the disadvantage that the headings are moved off the screen when it is made to scroll.

One can enter text, numeric values or formulas, and one can copy formulae to other cells adjusted to the new relative position. There is no facility to copy a formula from one cell to a range of cells, and one has to copy from cell to cell individually, which can be quite a job, if one uses a large spreadsheet.

The number of formulae allowed is limited to 100. Therefore if you are using formulae in 2 columns, you are restricted to 50 rows and if in 4 columns to 25 rows. In addition if you want to add a value to an existing value, e.g. a final dividend after entering an interim dividend in say cell g2, you can press the formula key (F3) and enter g2+x and the sum will be entered. But this will be counted a one of the 100 formulae. The alternative is to add the 2 values in your head and enter the sum with the numeric key (F2).

There are 4 pull down menus: system options, disk options, printer options and further options, which are easy and quick to use. I liked especially the print options. You can select the range of cells to be printed, and choose pica, condensed pica, NLQ and condensed NLQ. The condensed mode is useful if one wants to print more than 8 columns on an 80 column printer.

One can erase rows or columns, leaving empty spaces, but there is no facility to insert new rows or columns.

One can copy a block of cells called a range, and this may be useful if one wants to copy the headings after scrolling them off the screen.

A graphic option gives a simple histogram of a selected range of numeric values up to a maximum of 48 bars. It can be dumped to the printer.

GM-Calc is easy to use, though rather slow, as must be expected from a program written in BASIC. To restrict the formulae to 100 is a serious limitation and must detract from its value for more experienced users.

Dr G.Behr

Advice Line

The most comprehensive user helpline available to Spectrum, SAM and QL users.

What we offer ...

Most people will at some point encounter some problem, whether it be software or hardware related, which they can't solve. This is of course extremely infuriating, especially when the manual you have doesn't help at all.

That's where Advice Line comes in. Our team of experts is at hand to answer all your questions ... however complex they are. The Advice Line service is also extremely speedy, which eliminates the long delay you would experience writing to other magazines.

The popularity of Advice Line after only one month or so has prompted us to add another method of contacting us with your questions.

By telephone
The telephone service should be your first contact with us with your query. Hopefully, we will be able to sort it out there and then.

By modem
Subscribers to Prestel and Micronet can also get in contact with us with their queries. Just mailbox our account (582472067) with your question giving as much detail as possible and all being well we should have an answer to your question mailboxed back to you within 72 hours.

By post
It is sometimes the case that we can help you solve the problem over the phone or by e-mail. For example, if you have a program which you cannot get to work or a monitor with non-standard connections; the only way we are going to be able to help you is if you provide us with information like data sheets, listings, etc.

This is where you should use our postal service. We've taken a leaf out of the book of BBC Acorn User magazine by a guaranteed fast service. In S&SC's case, we guarantee to answer your question within 12 working days of us receing it - however complex your question is.

Not only is the service fast, but its also very comprehensive - the answer to your question will be a detailed (but not jargon-ridden) word-processed containing any diagrams or listings that we feel you require. We will also, of course, return any material which you have sent to help us.

In order to operate this fast service and emply only the most knowledgeable experts, we are charging a minimal amount of £1.75 to cover administrative costs and postage (i.e. you don't need to enclose an SAE).

Our guarantee is that if we can't get the answer to your question to you within 12 working days or we can't answer your question, then we'll refund your money in full. A further guarantee is that if after receiving our reply you're still 'none the wiser', then we'll rewrite our reply so that you can udnerstand it more fully.

In short, you can't lose and for your £1.75 you are getting an extremely fast and professional service.

TELEPHONE ADVICE LINE

If you can, please use the telephone service because we may be able to answer your question straight away.

When you call, please have all the relevant information in front of you. It may also be an idea to sit in front of your computer when you call with any relevant software already loaded.

The telephone advice line is in operation at the following times:

Mondays, Wednesdays, Thursdays and Fridays from 2pm until 5pm.

Postal Advice Line

To use the postal service, clearly describe your problem and fill out the form below in BLOCK CAPITALS.

Send these, and photocopies of all information you think will help us to answer the question.

We have recruited experts which cover all aspects of Spectrum, SAM and QL use, as well as people who can answer more general questions such as those relating to languages like "C" and Pascal.

QL Users

QL owning readers will be pleased to know that we are now able to cope with the vast majority of QL enquiries. This extends to the telephone and modem service. A full postal service for QL users will be available in time for next issue.

Advice Line

If you have a problem with a Spectrum or a SAM Coupé, a piece of commercial software, some hardware or a program you are trying to write then Sinclair & SAM COmputing is at hand to help. The Advice Line guarantees that we will answer your question within 12 working days for just £1.75.

If we fail to do this your cheque or postal order will be returned with our answer to your question - you can't lose!

If you feek our answer is written in a too technical manner (i.e. you can't understand what the Dickens we're on about!) then we'll be happy to rewrite it for no extra charge so that it explains it more fully.

Please note that asking to debugging your programs could be complex and we can't guarantee that we can offer a full solution.

***Sinclair & SAM Computing** Advice Line*

Name _____

Address _____

_____

_____

Daytime Telephone Number _____

Send this form, your question, all relevant materials and a cheque/PO made payable to *Garner Designs* to:

Garner Designs, 57 Lovers Walk, Dunstable, Bedfordshire, LU5 4BG.

Advice Line Answers

Each month we print some of the questions we have answered in the previous month.

Hopefully you'll see one which will help you out withouteven having to contact us for help. We've not got very much space this issue, so only one reply unfortunately.

Spectrum mice

Is there a mouse system available for the Spectrum? I do recall one called the AMX a while back, but I can find no trace of it now.

Paul Carden, Swansea

You're right in saying that there was a mouse called the AMX available. They are no longer in production however, and the only mouse I can recommend is Datel Electronic's Genius mouse system which is compatible with all Spectrums. It costs around £50 and comes with an art package to get you started, although there are a small number of software programs which support it. The mouse can also be controlled from Basic or machine very easily, and such a program exists in our PD library. Contact Datel on 0782 744707.

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INCL SAM ASSEM.3 + REVERSE ASSEMBLER (MAKES S.FILE FROM CODE), 2ND DISASSEM, GUIDE FOR WRITING CODE ON SAM, MEMORY PAGING, ROM/RAM, EXAMPLES, ETC. £14.50

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THIS MONTHS VOUCHER

SPECTRUM

TAPE UTILITY D - TAPE TO TAPE BACK UP OF MOST SPECTRUM PROGRAMS. CONVERTS MANY FOR RELIABLE LOADING - £8.50.

TRANSPACK 2 (TP2) - TAPE TO DISK/M-DRIVE TRANSFER. 1000'S OF PROGRAMS INCL CLICKY, FIREBIRD, SPEEDLOCK. £11.99 NOT FOR NOVICE. INFORMATION BOOKS 1,2,3. £2.50 EACH. INFO OF 100'S OF TRANSFERS TP2 CAN'T DO AUTOMATICALLY.

Z80 TOOLKIT - "BRILLIANT PACKAGE" - YS 7/88. M/CODE PACKAGE SIMILAR TO SAM TOOLKIT. A REAL MUST! £8.99.

PLUS3MATE AND MICROMATE - SIMILAR TO SAMDISK BUT FOR +3 AND M/DRIVE RESPECTIVELY. WILL CLONE, COPY FILES, SECTOR EDITOR ETC. SUPERB DOCTOR/TOOLKIT. +3MATE £12.99. MICROMATE £11.99

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LERM, DEPT GAR1, 11 BEACONSFIELD CLOSE, WHITLEY BAY. NE25 9UW.

PD DOMAIN

Daniel Garner and **Brent Stevens** bring you the monthly round-up of the rich variety of PD software available.

S&SC PD Library
Latest News

Our small, but growing range of PD software enabling other computers to emulate the Spectrum and QL is proving to be very popular indeed. From the letters we've been receiving, quite a lot of you still use your Spectrums and QLs even though you've upgraded to other machines. Although some users have sold their Spectrum/QL to finance their upgrade, those users you have kept their 'old' computer are getting great pleasure in finding out how their new computers manage emulating their humble Spectrum or not-so-humble QL.

Despite some dodgy emulators coming out, the Spectrum and QL emulators for the Amiga are really top notch. We've also just got hold of the ZX81 emulator for the Atari ST and this should be available from us soon.

WHAT IS *PUBLIC DOMAIN SOFTWARE?*

'Public Domain (PD) software' is software which the author has given up the copyright of and so can be copied and freely distributed. However, this distribution must be on a non-profit basis.

A common substitute for the term 'public domain' is 'freeware', which denotes software that the author still holds the copyright to but, like in the case of PD software, decrees that the software may only be distributed on a non-profit basis.

PD #1
Noughts & Crosses, Revise!, Menu/CAT Utiltiy†, Boot Sector Modifier†, Headload†, Headcopy†, Cat all†, Parameters†, Set Default Utility†, April Menu, CAT†, K Free, REM Store, Axel F*, BASIC Compressor, Screen Planner, Sort Demo, Date 2 Day, Ultra Clear A Screen, Label Maker, TV Trivia, The Earth, Sunset

PD #2
SecureIt, AutoSecureIt, Logo, Vector 3D, Other Worlds, Varisave, Multi-Flash, Trans 48†, Super Input, SpecTec Demo, Boot†, Sound to Light, Kingfisher, Countryside Scene, Autoloader†, Easylist

PD #3
Calendar, +3 Disk Checker†, Fonts, Recover†, Big Text, Screen Fade, Hex-Dec-Hex Convertor, REM Address Finder, 64 Column Display, Chordata, Drawmaster, Axel-F The Sequel*, Fonts Galore, Ramset‡, Crunch†, Double Height Text, INSTR$, LEFT$/RIGHT$/MID$, +3 to 128 BASIC Converter‡

PD #4
Oxygene, Guardians, Morse Code Tutor, Mouse Pointer Routine, Mega Blast, Compare, Hold It, Code Shifter, 48 Return‡, Hangman, Procross, Supermat

PD #5
CD Demo*, Manager*, Hi Format†, Amiga Ball, Optical Illusion, Box Clever, Up the Wall, AI Demo, Biorhythms, Super Darts, MasterMind, New Pointer Routine, Jacksoft Assembler

PD #6
CDOS†, Gagdisk, Monitor, Disassembler, Ghost†, Timed-Tables, Sums, The Shrink, Graveyard, Banner Maker, Music Trivia, One Arm Bandit, The Rat

PD #7
Objects, Japanese Patience, Oerkenvan, 4 in a Line, Garden, Solitare, Solchess, Smooth Scroll, Toolkit 50, Utility 1, Utility 2

PD #8
Linesplit, Chezfill, Grouf, Oh Sh@£!!, Convert, ANSI Graphics, REM Maker, Mylinear, Milgraph, Homesec, Clip Art, Batman, MC to BASIC, Planet, Ghost & Goblins, Menu†, Z80 Disassembler, Boom Box, Drumbeat, Snake, BASIC Compiler, 32x42 Screen Display, ASCII to BASIC.

PD #9
Trail Racer, MaxiRAM‡, Ball Demo, Editview 2, TV Test 2.

†Spectrum +3 specific and not included on tape version *Not compatible on a Spectrum 48K ‡Spectrum +2A & +3 specific

CP/M Disks

The S&SC PD Library also contains a number of Spectrum +3 discs for users of the CP/M operating system.

CP/M #1
Expanded disk cataoguer, DICE-like disk maintenance utility, disk copying tool and VDE - a good Wordstar compatible word processor.

CP/M #2
A MASSIVE collection of programs and routines. Includes: Anagrams. biofhythms, calendars, currency conversion, disk clear-up utility, file cruncher, library utility, Mastermind game, ASCII file displayer, base conversion, file sorter and much more.

CP/M #3
Another huge CP/M collection including: File extractor, FX80 printer tool, file printer, new RAM disk program, REM remover, find and exchange program, "Wordstar" cleaner and more! Something for everyone.

CP/M #4
Another great assortment of programs: useful text formatter to print on BOTH sides of fan-fold paper, file chopper, control stripper, find word routine, sector editor, word/line counter, SpeccyMex (+3 version of the Modem EXecutive) and more! Serious +3 users will love this!

CP/M #5
If you're into programming, get this. It contains: an excellent version of 'C' (with files, including a code optimiser!) PLUS a very comprehensive Z80 assembler.

CP/M #6
Contains a version of the industry standard MICROSOFT BASIC. ALso, files for CP/M #5's 'C' compiler and more.

CP/M #7
DBQ - a database with a powerful structured query language, designed for ease of use. Complete with 59K on-disk manual.

CP/M #8
DIMS, an easy to use card-index style databsae capable of mail merge. label printing, etc. Can even create mail merge files compatible with Tasword +3.

CP/M #9
DU49 - a superb multi-disk formatter and PLOT33 which will turn your printer into a graphics plotter!

Emulator PD

Emul #1
Sinclair QL emulator for users of the Amiga. Comes on three 3.5" disks. Price: £7.50

Emul #2
Spectrum emulator for users of the Amiga. Comes on one 3.5" disk. Price: £2.50

HOW TO ORDER

Ordering software from the S&SC PD LIbrary is easy. Just fill in the form below and we'll mail your software to you just as soon as we can.

PRICES

We've tried to keep costs down to a minimum so that we can offer you these tapes and discs at very low prices. Therefore, apart from the emulator software which is already priced, you can obtain the PD as follows:

Spectrum 48/128/+2(A) tape - £1.70 each Spectrum +3 disc - £2.70 each

S&SC PD Library Order Form

Name _____
Address _____
_____
_____
Post Code _____
Phone Number _____

I enclose a cheque/postal order made payable to *Garner Designs*, for the amount of £_____

Send this form with payment to:
Sinclair & SAM Computing,57 Lovers Walk, Dunstable, Beds, LU5 4BG.

Description	Tape/Disk	Price

Overseas P&P - add £0.10 per item _____
P&P ***£0.50***
TOTAL _____

SAM Coupé Public Domain

Last month, I promised a competition. Well I am going to start off with it this month, and the prize is a SAM T-shirt. I couldn't let you get away without answering a question first:

What is a Concept Keyboard?

Is it :-
a) A prototype of a new keyboard
b) The keyboard used on a piano or organ
c) The one press keyboard at McDonalds
d) The standard QWERTY keyboard used on computers and typewriters?

Send your name, address, measurements (on the assumption that you are lucky enough to win), and the correct answer on the back of a postcard to the SCPDSA address given at the end. Mark the address "T-Shirt Competition". The winner will be drawn from all the correct entries and announced next month. Closing date for the competition is August 15 1991.

Now onto this month's arrival of software goodies.

Enceladus issue 4 just missed last month's article, so here's a full review.

There's the new extended magazine (new, because it used to only tell you what was on the disk), part 3 of the Complete Guide to SAM Basic, a mandelbrot slideshow, and update to the generator program in Enceladus 1. There is a screen distorter program, called wrapper. This wraps the screen into a large ball. Some examples are included. The Star Wars screen demo from Fastline makes an appearance, as does a PD column from Fastline's Simon Scott. Strange thing, is that all the reviews are of his discs! Disc interrogator displays all directory information available, along with the file type, lengths, executions, etc. This type of thing can be found on full price software elsewhere, so it is a bit of a bargain finding it on a PD disc. Shadey gives all possible different grey scales, if you use a monochrome TV> A screen palette editor makes colouring of difficult screens possible, especially as palette line interrupts are catered for. Pointer is a machine code pointer driver program, which can be implemented into your own programs as a component in a windows environment, Tilt tilts a screen!, and Roman Font allows large text to be created, as mentioned last month.

Priced at £3.99, and an SCPDSA AWARD WINNER, this disc is well worth the extra money. Order code is M-RELI004.

Encelladus 5 has also made it's way out of Weston Super Mare. What can I say about it? Well, it is absolutely brilliant, if not a little highly priced at £3.99. On the disc is the magazine section, which is quite large this issue. There are the usual anecdotes about Coupé related

items, and the usual brilliant demos and utilities.

This issue is a must for printer users (namely the STAR series), as there is a testing program, and also a printer font generator, allowing you to create your own printer fonts! There's also a full Star LC200 review so you know what you are letting yourself into if you buy such a printer.

Also on the disc, is probably one of the best domes around. BALLS! No really. Actually, it is called "Balls", and it certainly isn't!? This demo uses around 20 odd ball sprites, and animates them in real time, forming a spectacular sequence. For example, a rotating gun turns into a helicopter, which in turn files around the screen and lands.

There are a few other demos and programs, so you are just going to have to find out what they are for yourself. Order code is M-RELI005, price is the usual £3.99, and it is the usual SCPDSA AWARD WINNER.

Another fantastic disc is FRED issue 11. This is a double disc issue, comprising of parts A and B. The price of FRED has gone up a little, to cover fairly recent VAT increases, more expensive costs, etc, but at £1.70 for each part, there isn't much to lose. In issue 11A is the usual FRED magazine, Freviews on the latest software and hardware for the Coupé, no less than 6 music tunes, a disk message creator, drum machine (software driven), part 6 of the ever popular Machine code tutorial, another mandelbrot set diagram generator, a sliding puzzle game, how not to interpret road signs (pretty funny), and miscellaneous items.

Taking a breather, this disc is an SCPDSA AWARD WINNER, price £1.70, and order code is M-FRE01A.

Onto FRED 11B. More Freviews start this disc off, followed by a sound to light program. This is reviewed further on XAV demo disc 1, a little further on. Trip-A-Tron makes yet another comeback, with shapes and lines moving around the screen, and getting a touch dizzy through palette cycling. A great, although slightly slow dissasembler for giving the Z80 mnemonics of code programs makes a handy features for those following the Machine Code tutorial. The Masters of Magic creep in with a demo of the first level of their new game PURGE. This is the name for No Way Back part 2. The intro music is absolutely fantastic. I was fooled into thinking that it was a sound sample, but as more tracks were overlayed, I just had to break in and prove myself wrong. Part 3 of Encounters features Zebbedie Green, the wacky animated alien. This time, he takes the opportunity to drive, ending up in a bit of an accident with a wall! BUBBLES is the name of a small "Bubble Bobble" demo, showing sprites probably taken from the ST or Amiga version. There is a pleasant interrupt driven tune playing, where even if you break in, the tune will carry on playing. In fact, I am typing this at the moment on Tasword, listening to the bells and jingles of the game. Again, there are some more miscellaneous items added as well.

As with 11A, this disc is £1.70, an SCPDSA AWARD WINNER, and a great disc to buy (along with 11A of course!). The order code is different : M-FRED01B. If you want both discs at once, use M-FREDOM2, where the price is £3.25.

I am currently developing a 3D space trading game for the Coupé. I estimate that there will be around 20000 locations of the space map, so I need your help. I need you to send your ideas of what the planet names should be, along with the odd star. Try to keep the names fairly short (no more than 10 characters max). I cannot give anything in return, but thanks. Hope to see a few great suggestions and names.

No further developments on the 24-bit sample. I will keep you posted if I hear anything new. Also from the same source, is a special demo, with text scrolling in the border area. Again, watch this space.

Issue 10 of SAM Supplement has just poped through the letterbox. There is a great animation demo of what is probably an average run of the mill Supplement reader running

Software Association

after his Coupé bus! Not as graphically brilliant as Prince of Persia, but well put together all the same. There's a usual mix of news, adverts, demos, and simple utilities, and at just £2.00, it isn't bad. In fact, if you like looking through programs to see how they are written, this is the ideal disc to buy. There's also the odd collection of clip art, for anyone interested. Only available from Brian Mumford (57 St. Saviours Road, West Croydon, Surrey, CR0 2XE), distributor of the Supplement.

WHOOPS! Correction time. Stephen Pick of SAM Disk, not to be confused with Lerm's SAM Disk, which came out later, is not doing the artwork for issue 2 of SAMsational Software, but for issue 3.

Now, being a news column for the SCPDSA, I have got some SCPDSA news. The SCPDSA is to act as the London Sales Agent for SAMCO. This means that all computer retailers, who currently stock Amigas, ST's, etc will be getting a visit, to convince them to stock Coupé's. If you live in the London area, and would like your local store to stock the Coupé, drop us a line, and we will see what we can do. More Coupés sold, means more users, and therefore more support from software houses and developers.

Now, finally a review of XAV Demo Disk 1. Priced at £1.00, and order code D-XAVX001, this disk starts with an animated demo, also playing some form of sample. I haven't got a sampler yet (but will have soon), so I will confirm if the sample works next month. There is another sample with the Disco sound to light program. Pressing different keys is supposed to play different samples, and does alter a peculiar display. There's a good collection of artwork, integrated with fractals, as well as a fractal generator. Last is a text editor, which is a little on the fiddly side to use, but offers some advanced features found on commercial word processors.

More next month!

Brent Stevens

Eds note:
The copy of the SCPDSA subscription form in issue 2 was inadvertently WOBed ... typo-speak for **W**hite **O**n **B**lack, thus making it rather difficult to fill in! Apologies all round.

SCPDSA SUBSCRIPTION FORM

I wish to find out more about PD software for my SAM, so send the FREE demo disk, and catalogue, as soon as possible. I have enclosed my payment for £2.00*.

My Name :
My Address in :

And my Postcode is :
Signed :

*** NOTE: EEC add £1.00, Rest of World add £1.50**

SCPDSA, 42 Eaton Drive, Kingston Upon Thames, Surrey, KT2 7QT.

SAM PD NEWS

QL Corner

QL users ahoy! Fleet Tactical Command sited! Launch depth charges, arm phasers! Oops, sorry wrong game!

Dilwyn Jones Computing is now the sole UK agent for the DI-REN range of QL software and hardware, including the highly acclaimed Fleet Tactical Command strategy simulation game and the Micro Process Controller hardware which gives the QL six relay switched outputs for the control of external equipment. Also included in the range is the Fugitive adventure and the Network Prover hardware which gives a visual indication of communication taking place over the QL network.

DJC also have a number of new programs which have just been released. These include Super Disc Labeller which is an invaluable aid in keeping abreast of what all of your discs contain. Printing to Epson compatible 9 or 24 pins printers, SDL allows you to print onto a roll of labels the contents of your discs. The program is set up for printing to 3.5" disc labels (which are available from DJC for £2.50 per roll of 100) you can also set the program up to print to 5.25" disc labels or even address labels.

Which files are printed on the labels is totally configurable. Files can be sorted into order or grouped together, or just the most important files on the disc can be printed.

The program is menu driven and runs on QLs with 128K extra memory or more. It comes with a 20 page instruction manual and is available on 3.5" or 5.25" disc. At just £10, this handy little program will prove to be most useful for anybody who has quite a few discs.

SUPER DISC LABELLER
BY DILWYN JONES & IMRE DOMINIK.

9PIN_PROP_DRIVER_DAT	KXP1081_DRIVER_DAT
9PIN_DRIVER_DAT	SDL_CODE
24PIN_DRIVER_DAT	SDL_PRINTER_DAT
24PIN_PROP_DRIVER_DAT	SDL_TASK
BACKUP_BAS	UPDATES_DOC
BOOT	

EXAMPLE OF PRINTED LABEL FROM THE SUPER DISC LABELLER PROGRAM,WITH SIMPLE LAYOUT OF FILE-NAMES IN TWO COLUMNS.FAIRLY LARGE TEXT USED.

SUPER DISC LABELLER
BY IMRE DOMINIK & DILWYN JONES.

9PIN_PROP_DRIVER_dat	194	DATA	1991 May 04
9pin_DRIVER_dat	178	DATA	1991 May 04
24PIN_DRIVER_dat	182	DATA	1991 May 04
24PIN_PROP_DRIVER_dat	192	DATA	1991 May 04
BACKUP_bas	368	DATA	1991 May 04
BOOT	437	DATA	1991 May 04
KXP1081_driver_dat	176	DATA	1991 May 04
SDL_code	6078	DATA	1991 May 04
SDL_PRINTER_dat	166	DATA	1991 May 04
SDL_task	69146	22528	1991 May 04
UPDATES_doc	18432	DATA	1991 May 04

SINGLE COLUMN PRINTOUT WITH STATISTICS (FILE LENGTH TYPE/DATASPACE AND FILE UPDATE DATES) IN SMALL PRINT

Fleet Tactical Command

Fleet Tactical Command is a bit of an odyssey amongst Sinclair QL games, in as much as it actually makes very good use of the QL's capabilities. FTC is a 3D naval simulation of large proportions.

Your just is to control a 16 vessel fleet in a 1000 sq mile play area. The fleet consists of a number of different types from warships to supply tankers and the like (although you can define the mix of ships in your fleet). Each vessel has its own unique attributes which ultimately govern its role.

The graphics are 3D wireframe and considering that the game is very big, they are rendered to screen at an acceptable speed. The 3D view shows 180 degrees, viewable in any direction you want. The whole display hangs together very well and is accurate too. The screen consists mainly of the ships instruments and indicators, with the 3D view taking up roughly a third of the screen.

The fleet is controlled by a range of 100+ text commands which allows you to control direction, speed, and such like. The whole thing works really well, and in the heat of battle panic is a common occurrence!
Weaponry is comprehensive, although obviously only certain vessels are equipped with certain weapons.

Fleet Tactical Command comes is a hefty A4 box containly colour charts, operations manuals, the game's cartridges or discs, game logs, and mapping aids such as protractors and rulers. The comprehensive manual teaches you everything you need to know about playing the game, even down to the 'technical' aspect of such things as navigation, tide patterns, etc.

If all this wasn't enough, you can play against another person via the QL's RS232 port via a direct-link or a modem; or via the QL network.. This will hot up the proceedings quite a bit, although this is a feature I have not as yet been able to try for myself.

Fleet Tactical Command is a massively detailed program suitable for anybody who even remotely like simulation games. The producers of Fleet Tactical Command, Di-Ren, are also updating the program which should see the program's many features being increased and improved.

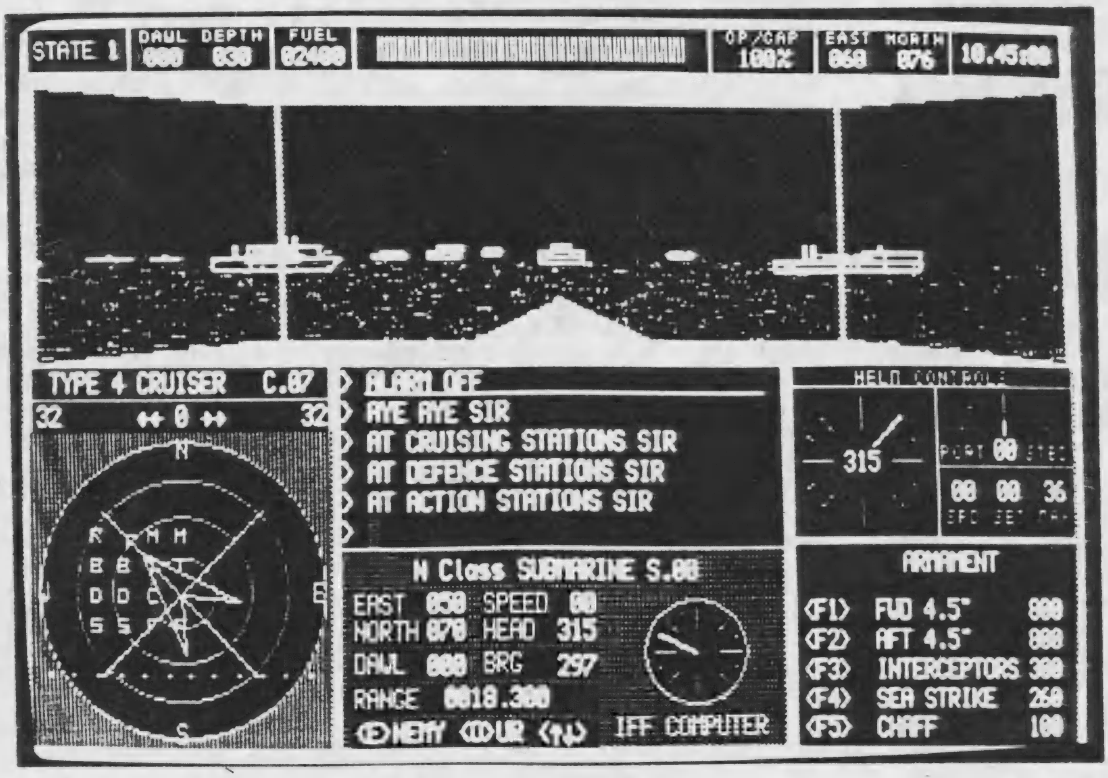
At £49.95, Fleet Tactical Command seems expensive, but it really is excellent value for money. An added bonus is that it will fit in a 128K machine. If you only buy one game for your QL, buy this one.

D-Ren as based at:

43 David's Road.
Forest Hill,
London.
Tel: (081) 291 3751

Fleet Tactical Command is also available from the sole UK agent, Dilwyn Jones Computing:

41 Bro Emrys, Tal-y-Bont, Bangor, Gwynedd, LL57 3YT.
Tel: 0248 354023.



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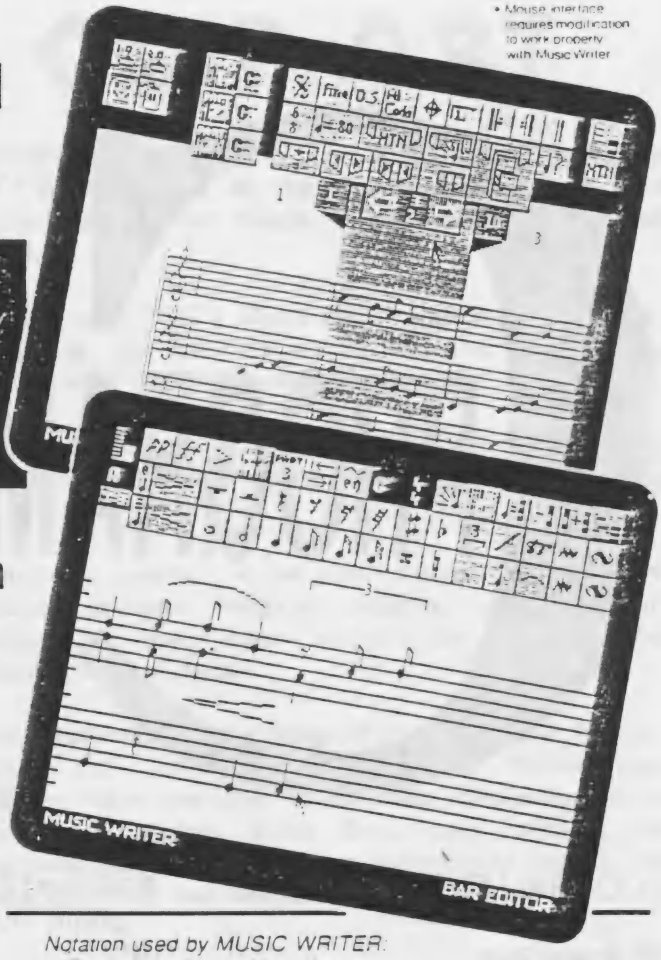


* Mouse interface requires modification to work properly with Music Writer

MUSIC WRITER is a new music program that can help the beginner to learn how to read music. A feature of MUSIC WRITER is WYSIWYH - What You See Is What You Hear. This allows you to find out what effect various music symbols have when the score is played. If you're not sure what a mordent does, use the pointer to pick it up and put it on a note - MUSIC WRITER will play it for you. If you are unsure of the order to play bars with D.S. alcoda and so on... MUSIC WRITER will show the order they are played in. All music notation used by MUSIC WRITER is demonstrable - that's what makes MUSIC WRITER a powerful learning aid for those learning to read and play music.

The serious home musician will also find MUSIC WRITER bringing new life to their Spectrum. The WIMP system is very easy to use and there are powerful editing facilities that allow blocks of bars to be easily moved, copied, deleted or saved. The filing system allows files to be inserted into current work as well as the more conventional load and save facilities.

Apart from the 46K RAM disc, only tape filing is available on the 128 and +2. +3 DOS is available on the +3 and also on the +2A (if drive added). The RAM disc could serve as the main filing system with a 'snapshot' interface used to save sessions to other media.

MUSIC WRITER has a voice bank of ten voices which can be edited and saved for loading on another session. Each voice is made up of three effects. The volume effect shapes the 'attack' and 'decay' of the sound. The pitch effect alters pitch relative to the pitch set by the stave and any accidentals. Changes can be as little as a quarter tone to as much as one octave. The noise effect adds noise to create drum and wind sounds. Unlike many other music programs, the volume on any voice can be changed without having to alter the voice's volume effect. This enables accents, crescendo and diminuendo marks to be played - creating much more expressive music than is usually possible on a Spectrum.

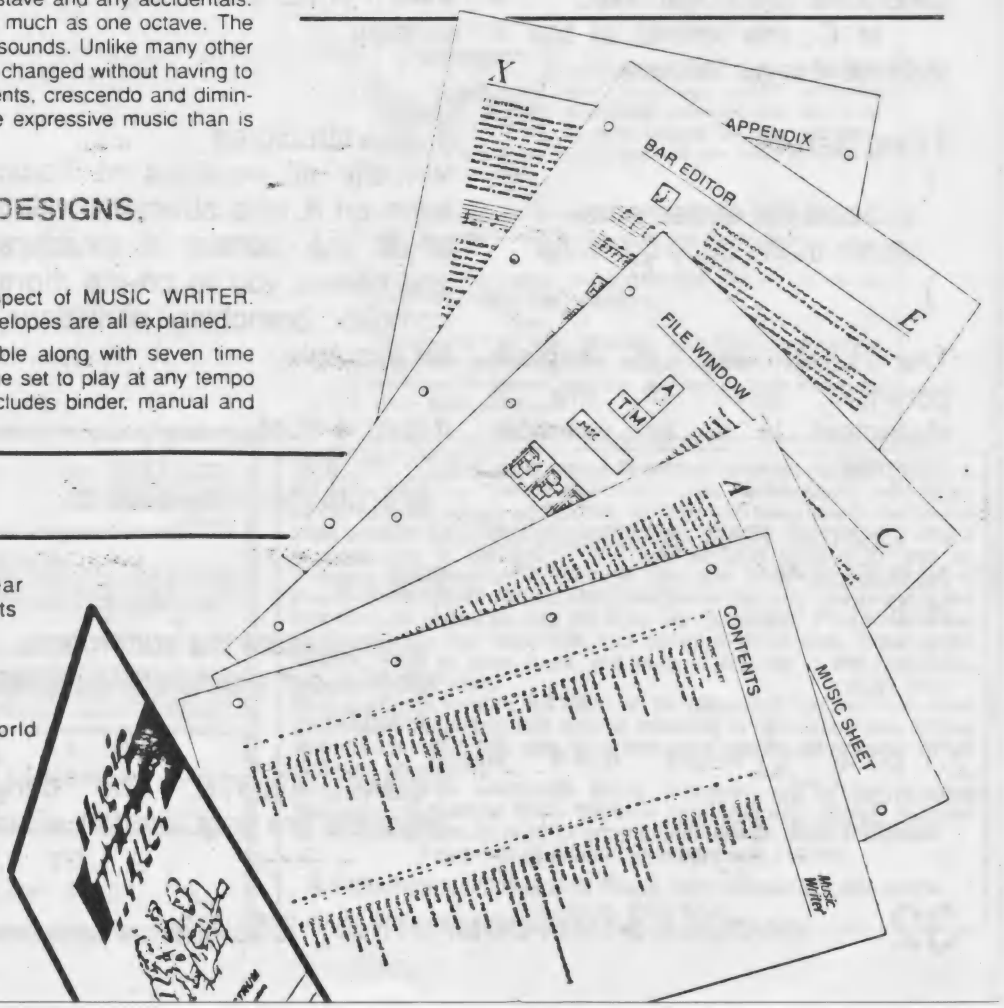
AVAILABLE FROM GARNER DESIGNS.
SEE PAGE 44

The manual assumes no knowledge of any aspect of MUSIC WRITER. WIMP, icon actions, music notation used and envelopes are all explained.

All the distinct major and Minor keys are available along with seven time signatures most commonly used. Each bar can be set to play at any tempo between 50 and 180 beats per minute. Price includes binder, manual and demo scores.

Notation used by MUSIC WRITER:

* Repeat marks and bar lines
* Volta brackets * Segno * Fine * Coda * al Coda
* D.S. * D.S. al Coda * D.S. al Fine
* Notes and rests from semibreve to demisemiquaver
* Triplet (rests allowed)
* Dotted notes * Staccato notes
* Accidentals * Tie and slur * Glissando
* Trill * Turn * Mordent
* Accent * Crescendo and diminuendo



Features:

* WYSIWYH - What you see is what you hear
* Three part score for upto three instruments
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* Includes 12 folk songs from around the world

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C PROGRAMMING

PROGRAM FLOW

'if' Statement

As in Basic, C's if statement allows conditional branching through a program, i.e. specific parts of a program will only be executed when specific conditions have been met.

In C, the format of the if statement is as follows:

```
if (test is true)
 {
  execute the statements
  within these curly brackets
 }
```

The best way to explain potential uses of the if statement is in an example program:

```
/* CHECK FOR A SPECIFIC
NUMBER */
main ()
{
 int num;

   printf ("Please input a
number\n");
 scanf ("&d",&num);
 if num==10
   printf("Number entered was
10");
}
```

In the example above, the if statement checks to see if the number input was 10. If it is, then it prints a message on the screen.

if..else structures

Virtually all versions of Basic have an if..else structure which takes the normal if structure and allows you to create more complex branching conditions, for example,

```
if (test is true)
 {
  execute these statements
 }
else
 {
  don't execute the statements
  above, but execute these ones
  instead
 }
```

PLEASE NOTE: The curly brackets are only needed when the statements following either the if... or else occupy more than one line.

The following example, elaborates on the above program,

```
/* CHECK FOR A SPECIFIC
NUMBER V2 */
main ()
{
 int num;

  printf ("Please input a number
\n");
 scanf ("&d",&num);
 if num==10
   printf ("The number entered
was 10");
 else
   printf ("The number entered
was not 10");
)
```

As in Basic, you can 'nest' if..else structures, i.e. an if..else statement can be executed from within another if..else statement. Your C compiler's documentation should be consulted as to how many levels they can be nested upto though.

The FOR loop

As in Basic, the for statement marks the start of a section of code which will be repeatedly executed for a set number of iterations. The statement takes the following form:

```
for (initialiser; condition;
increment)
```

The initialiser and increment parts are optional. As with the Basic FOR statement, a variable is used to control the loop. For example,

```
for (x=2; x<12; x++)
```

This is the equivalent of the Basic statement,

```
FOR X=2 TO 11 STEP 1
```

I.e. the initialiser (x=2) marks the number at which the loop will start, the condition is that the loop will last only while the variable X has a value under 12, and the increment (++) will increment the variable x by 1 each time the loop ends.

An example program is as follows,

```
/* FOR loop example */
main ()

{
int x;

for (x=2; x<12; x++)
 printf ("&d\n",k);
}
```

This will display the following on the screen,

```
2
3
4
5
6
7
8
9
10
11
```

The WHILE loop
The while loop is probably the most versatile loop structure available to the C programmer, and wherever possible it should be used in preference to others.

The statement takes the form,

```
while (some condition)
 {
  execute all
  these statements
 }
```

Foe example,

```
main ()
{
int num;

while (num<=50)
{
 printf("Enter a number which is
less than 50: ");
 scanf("&d",&num);
  printf("Number entered was,
&d",num);
}
printf ("Number not less than
50");
}
```

"BASIC - an unstructured jungle of unconditional branching structures."

This program reads the user's input from the keyboard, and while the input is less than 50 it displays this number and prompts the user for another input. However, if the user enters a number which is greater than 50, although it displays that number on the screen, it also tells the user than the number is not less than 50 and exits from the program.

The Do while structure
Like Basic's REPEAT..UNTIL, C's do while will run through a section of code at least once. The first time it executes all the statements, and then on the outcome of a condition evaluates whether the section should be re-executed.

The goto statement (yuk!)
The goto statement has been included in most versions of C since its creation, mainly I guess to smooth the transition programmers make from Basic (an unstructured jungle of unconditional branching structures) to C (relatively structured commands suited to top-down/Michael Jackson programming methods). Although I never use the statement, its there if you need it.

As C does not use line numbers to recognise parts of a program, labels are used (much like SAM Basic). For example,

```
beginning: if (condition) goto
theend;

                statements to be
executed if
          above condition was not
true

          goto beginning;
theend: ... rest of program
```

The break statement:
This statement allows you to exit from the loop which the break statement is in, resulting in the statement after the end of the loop structure being executed. Foe example,

```
for (;;)
{
 printf("Please press any key: ");
 inp=getchar()
 if (inp=='x')
  break;
}
```

This program sets up an infinite loop, for (;;), and then continues

to prompt for a key press until the user presses the 'x' key, whereupon the break statement exits from the loop and continues with the rest of the program.

The switch command

When you need to write a routine which uses a lot of similar code, using the switch command significantly cuts down on the amount of typing needed.

For example, say you need to make numeric comparisons for the months of the year. Normally it be be as follows,

```
if month==1
 printf("January");
else if month==2
 printf("February");
else if month==3
 printf("March");
else if month==4
 printf("April");
else if month==5
 printf("May");
else if month==6
 printf("June");
else if month==7
 printf("July");
else if month==8
 printf("August");
else if month==9
 printf("September");
else if month==10
 printf("October");
else if month==11
 printf("November");
else if month==12
 printf("December");
else
  printf("That is not a valid month");
```

Using the switch command, this routine would be as follows,

```
/* Example of the switch command */
#include <stdio.h>

main()
{
 int month;

 print("Enter 1-12 for month: ");
 month=getchar();

 switch (month) {
     case 1 : printf ("January");
break;
     case 2 : printf ("February");
break;
      case 3 : printf ("March");
break;
   case 4 : printf ("April"); break;
   case 5 : printf ("May"); break;
       case 6 : printf ("June");
break;
   case 7 : printf ("July"); break;
      case 8 : printf ("August");
break;
    case 9 : printf ("September");
break;
     case 10: printf ("October");
break;
    case 11: printf ("November");
break;
    case 12: printf ("December");
break;
    default: printf ("That is not a
valid month);
  }
}
```

The 'default' at the end of the case list simply picks up on any values not already accounted for, i.e. in the case (no pun intended) of the above program any value outside 1-12 is acted upon by the default line.

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Chezron Software	18	Peter Naughton	9
EEC Ltd	35	SD Software	9
Format Publications	19	Steve's Software	19
Flexibase Software	19	Teacher's Pet Software	9
Garner Designs	9		
Garry Rowland	19		
Kobrahsoft Software	40		

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